Remarks

Upon entry of the foregoing amendment, claims 71, 72, 75-84, 86, 87 and 90-105 are pending in this application. Claims 74, 85 and 89 are newly canceled herein without prejudice or disclaimer. Claims 1-70, 73 and 88 were previously canceled without prejudice or disclaimer. Claims 71, 72, 81, 82, 86, 87, 94, 96 and 97 have been amended. Claims 98-105 are newly added herein. Applicants reserve the right to pursue cancelled subject matter in a continuing or divisional application. Claims 71 and 102 are the independent claims.

Support for the amendments to claim 71 for "wherein said formulation is hydrated such that delivery of an effective amount of said formulation occurs" is found, for example, on page 9, line 2 ("..materials to promote skin hydration..."); page 10, line 29 ("liquid formulations"); page 11, lines 29-end through page 12, line 8 ("high concentrations of an active component of the formulation may be achieved by solubilization directly at the site of immunization" and "Moisture from the skin and an occlusive dressing may hasten the process"); and, elsewhere throughout the specification. Support for the phrase "and mixtures thereof" is found, for example, on page 11, lines 8-11, and, elsewhere throughout the specification. Claim 71 has also been amended to more clearly claim the invention.

Claim 72 has been amended to correct a spelling error in the word "enterotoxin."

Support for the amendments to claim 81 are found, for example, on page 10, lines 24-25, and, elsewhere throughout the specification.

Claim 82 has been amended to correctly claim antecedent basis from claim 81.

Claim 86 has been amended to correctly claim antecedent basis from claim 81.

Claim 87 has been amended to correct a spelling error in the word "enterotoxin."

Claim 94 has been amended to correctly claim antecedent basis from claim 81.

Claims 96 and 97 have been amended to include the phrase "formulation is hydrated by application" (of a patch). Support for the amendments is found, for example, on page 11, lines 29-end through page 12, line 8 ("Moisture from the skin and an occlusive dressing may hasten the process.") and, elsewhere throughout the specification.

Support for new claims 99, 101 and 105 is found, for example, on page 50, line 14 ("...to disrupt only the stratum corneum or superficial epidermis").

Support for new claims 98, 100 and 104 is found, for example, on page 49, lines 29-30; page 50, lines 8-14 ("formulation is hydrated by disruption..."); on page 11, lines 29-end through page 12, line 8 ("Moisture from the skin and an occlusive dressing may hasten the process."); and, elsewhere throughout the specification.

Support for new claim 102 is found, for example, in currently amended claims 71 and 81(see support as provided above); in support for new claims 96 and 97, cited above; in examples 60 and 61; and, elsewhere throughout the specification.

Support for new claim 103 is found, for example, on page 11, lines 29-end through page 12, line 8 ("Moisture from the skin and an occlusive dressing may hasten the process"); and, elsewhere throughout the specification.

No new matter has been added by this amendment. In view of the amendments and following remarks, reconsideration of the rejections and withdrawal thereof is respectfully requested. The Office Action dated September 27, 2004 has been carefully reviewed and the foregoing

amendments and arguments are made in response thereto.

Rejection of claims 71, 72, 75-87, 90-95, 96 and 97 under 35 U.S.C. § 112, first paragraph

The Office rejected claims 71, 72, 75-87, 90-95, 96 and 97 under 35 U.S.C. § 112, first paragraph, because the specification while being enabled for "a method for transcutaneous immunization comprising applying a formulation to hydrated skin," (emphasis in the original) allegedly does not reasonably provide enablement for "a method for dry TCI, i.e., a method wherein no hydration of the skin has been performed and wherein a dry formulation is employed." The rejection is respectfully traversed.

The rejection is believed to be moot in view of the amendment to claim 71 and in view of new independent claim 102. Claim 71 has been amended to recite the phrase "wherein said formulation is hydrated.... " Claim 81 now depends from claim 71. New claim 102 also recites the same phrase. Thus, independent pending claims 71 and 102 do not recite a method wherein no hydration has been performed and a dry formulation employed. The amendments to the claims overcome the rejection. Reconsideration and withdrawal of the rejection is respectfully requested.

Obviousness-type Double Patenting Rejection over Appl. No. 09/266,803; Appl. No. 10/633,626; Appl. No. 10/701,069, Appl. No. 10/435,676 and U.S. Patent No. 6,797,276

The Office provisionally rejected claims 71, 72, 74-87, 89-95, 96 and 97 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 3-35, 50-77 and 79-111 of copending Application No. 09/266,803 ['803]; over claims 2, 5, 6, 11, 19 and 32 of copending Application No. 10/633,626 ['626]; over claims 2, 5, 6, 11, 19 and 32 of copending Application No. 10/701,069 ['069]; claims 1, 5, 12, 14 and 17 of copending Application No. 10/435,676 ['676] and claim 104 of issued U.S. Patent No. 6,797,276 ['276].

Applicants have submitted herewith a terminal disclaimer over the '803 application and the '276 patent.

Regarding the '626 application, the instant claims have been amended or written such that application of a dry formulation to dry skin is not specifically claimed herein. Claim 32 of the '626 application has been cancelled in a preliminary amendment filed concurrently herewith. A copy of the Third Preliminary Amendment, canceling claim 32, is attached. Therefore, the obviousness-type double patenting rejection cannot be maintained over the pending claims of the instant application.

The '069 application has been abandoned.

Regarding the '676 application, claims 1, 5, 12 and 14 of the '676 application are directed to methods of immunostimulation where the antigen (vaccine) is administered by a route of administration other than transcutaneous to the subject. Claims 17-20 require administration of separate antigen and adjuvant formulations. In contrast, the instant claims are directed to methods of transcutaneous comprising applying a formulation to skin of a subject. The Office has apparently premised the obviousness-type double patenting rejection on a common result of immunostimulation. The fact both claim sets address a common goal is not adequate basis for the rejection. An obviousness-type double patenting rejection must address the limitations of the claims in view of each other. Therefore, the obviousness-type double patenting rejection based on the '676 application cannot be maintained over the pending claims of the instant application.

Reconsideration and withdrawal of the rejections is respectfully requested.

Rejection under 35 U.S.C. § 112, first paragraph

The Office rejected claims 71, 72, 74-87, 89-95, 96 and 97 under 35 U.S.C. § 112, first paragraph, as the specification allegedly does not contain a written description of the claimed

invention, and, that the disclosure does not reasonably convey to one skilled in the art that the inventors had possession of the claimed invention at the time the application was filed. The rejection is respectfully traversed.

The Office alleges the specification and the claims as originally filed do not provide support for the invention as now claimed, specifically:

A) "a modified ADP ribosylating exotoxin ....modified to be less toxic" (Claims 71 and 81);

C) a "formulation comprised of antigen and adjuvant" (claim 81); and,

D) "heat killed rabies virus" (claim 85).

Claim 71 has been amended herein to delete the phrase "a modified ADP ribosylating exotoxin ....modified to be less toxic." Claim 81 has been amended herein to now depend from claim 71 and does not recite the phrase "formulation comprised of antigen and adjuvant". Claim 85 is newly amended and the phrase "heat killed rabies virus" has been deleted. The deleted subject matter of claims 71, 81 and 85 has been cancelled without prejudice and the right reserved to pursue the deleted subject matter in continuing or divisional applications. In view of the amendments to the claims, reconsideration and withdrawal of the rejection is respectfully requested.

Rejection under 35 U.S.C. § 112, second paragraph

Claims 72 and 87 were rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The rejection is respectfully traversed.

The Office notes "entertoxin" is properly spelled "enterotoxin." In reply thereto, Applicants have amended claims 72 and 87 to correctly spell "enterotoxin." In view of the amendment to the claim, reconsideration and withdrawal of the rejection is respectfully requested.

Conclusion

The foregoing amendments and remarks are being made to place the application in condition for allowance. Applicants respectfully request reconsideration and the timely allowance of the pending claims. A favorable action is awaited. Should the Examiner find that an interview would be helpful to further prosecution of this application, the Examiner is invited to telephone the undersigned at his convenience.

Except for issue fees payable under 37 C.F.R. § 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. § 1.16 and § 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account 50-0310. This paragraph is intended to be a **Constructive Petition for Extension of Time** in accordance with 37 C.F.R. § 1.136(a)(3).

Respectfully submitted,
Morgan, Lewis & Bockius LLP

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PATENT
Attorney Docket **056707-5009-01 US**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: **Gregory M. Glenn *et al.***	)	
U.S. Application No. **10/633,626** (Continuation of U.S. Appl. No. 09/545,417)	)	Group Art Unit: **1653**
Filed: **August 5, 2003**	)	Examiner: **Not Assigned**
For: **Dry Formulation for Transcutaneous Immunization**	)	

THIRD PRELIMINARY AMENDMENT

This third preliminary amendment is being filed prior to first action. Please amend the application as follows:

Amendments to the Claims are reflected in the listing of the claims which begins at page 2 of this paper.

Remarks/Arguments begin on page 6 of this paper.

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

1(canceled)

2 (currently amended): A method of inducing an immune response comprising applying a formulation to intact dry skin of a subject, wherein the formulation is comprised of at least one antigen and at least one adjuvant wherein the formulation is applied in dry form; and wherein the formulation is applied in an amount and for a length of time effective to induce an immune response specific for the at least one antigen.

3 (original): The method of Claim 2, wherein the formulation is applied with an occlusive dressing.

4 (original): The method of Claim 3, wherein the occlusive dressing covers a surface area of the intact skin which is larger than at least one draining lymph node field.

5 (original): The method of Claim 2, wherein the formulation consists essentially of antigen and adjuvant.

6 (original): The method of Claim 2, wherein at least one adjuvant is an ADP-ribosylating exotoxin.

7 (previously presented): The method of Claim 2, wherein at least one adjuvant is selected from the group consisting of bacterial DNA, chemokines, tumor necrosis factor alpha, genetically altered toxins, chemically conjugated bacterial ADP ribosylating exotoxins, unmethylated CpG dinucleotides, lipopolysaccharides, and cytokines.

8-10 (canceled)

11 (original): The method of Claim 2, wherein at least one antigen is derived from a pathogen selected from the group consisting of bacterium, virus, fungus, and parasite.

12 (canceled)

13 (original): The method of Claim 2, wherein at least one antigen is selected from the group consisting of carbohydrate, glycolipid, glycoprotein, lipid, lipoprotein, phospholipid, and polypeptide.

14 (original): The method of Claim 2, wherein the formulation is comprised of an attenuated live virus and at least one antigen is expressed by the attenuated live virus.

15 (canceled)

16 (original): The method of Claim 2, wherein at least one antigen is multivalent.

17-18 (canceled)

19 (original): The method of Claim 2, wherein a single molecule is both an adjuvant and an antigen of the formulation.

20-30 (canceled)

31 (original): The method of Claim 2 further comprising applying alcohol to the intact skin prior to application of the formulation.

32-37 (canceled)

38 (currently amended): A method of ~~immunization~~ inducing an immune response comprising applying a dry formulation to dry skin of a subject, wherein the dry formulation comprises antigen and adjuvant as active ingredients, in an amount and for a time sufficient to induce a systemic or regional immune response, or both, specific for the antigen.

39-45 (canceled)

46 (previously presented): The method of claim 11, wherein said bacterium is anthrax.

47 (previously presented): The method of claim 11, wherein said virus is rabies virus.

48 (previously presented): The method of claim 2, wherein the antigen is an influenza antigen.

49 (previously presented): The method of claim 2, wherein the antigen is an influenza antigen and the adjuvant is an ADP-ribosylating exotoxin.

50 (previously presented): The method of claim 19, wherein the single molecule is heat-labile enterotoxin (LT).

51 (previously presented): The method of claim 3, wherein the formulation is applied with an occlusive dressing.

52 (previously presented): The method of claim 38, wherein the formulation is applied with an occlusive dressing.

53 (previously presented): The method of claim 52, wherein the occlusive dressing further comprises the formulation on an adhesive surface.

54 (previously presented): The method of claim 38, wherein the antigen is an influenza antigen.

55 (previously presented): The method of claim 38, wherein the antigen is an influenza antigen and the adjuvant is an ADP-ribosylating exotoxin.

56 (previously presented): The method of claim 38, wherein a single molecule is both an adjuvant and an antigen of the formulation.

57 (previously presented): The method of claim 56, wherein the single molecule is heat-labile enterotoxin (LT).

58 (previously presented): The method of claim 38, wherein at least one antigen is derived from a pathogen selected from the group consisting of bacterium, virus, fungus, and parasite.

59 (previously presented): The method of claim 58, wherein the bacterium is anthrax.

60 (previously presented): The method of claim 58, wherein the virus is rabies virus.

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REMARKS

Upon entry of the foregoing amendment, claims 2-7, 11, 13, 14, 16, 19, 31, 38 and 46-60 are pending in this application. Claim 32 is newly canceled herein without prejudice or disclaimer. Claims 2 and 38 are newly amended herein. Claims 1, 8-10, 12, 15, 17, 18, 20-30, 33-37 and 39-45 have been canceled without prejudice or disclaimer. Applicants reserve the right to pursue claims directed to the canceled subject matter in a continuing or divisional application. Claims 2-7, 11, 13, 14, 16, 19, 31, 38 and 46-60 are currently under examination.

Support for the amendments to claims 2 and 38, now claiming application of a dry formulation to dry skin, is found, for example, page 40, lines 13-21, and, elsewhere throughout the specification. The amendment to claim 38, changing "immunization" to "inducing an immune response," was done to correct antecedent basis.

No new matter is believed to have been added. In view of the amendments and following remarks, reconsideration of the rejections and withdrawal thereof is respectfully requested.

Conclusion

The foregoing amendments and remarks are being made to place the application in condition for allowance. Applicants respectfully request reconsideration and timely allowance of the pending claims. A favorable action is awaited. Should the Examiner believe an interview would be helpful to further allowance of this application, the Examiner is invited to telephone the undersigned at his convenience.

Except for issue fees payable under 37 C.F.R. § 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. § 1.16 and § 1.17 which may be required, including any required

extension of time fees, or credit any overpayment to Deposit Account 50-0310. This paragraph is intended to be a **Constructive Petition for Extension of Time** in accordance with 37 C.F.R. § 1.136(a)(3).

Respectfully submitted,
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